UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/829,096	04/21/2004	Stephen L. Johnson	9432-000273	5992

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EXAMINER
CAO, DIEM K

ART UNIT	PAPER NUMBER
2194	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/27/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

PTOL-90A (Rev. 10/06)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _21 April 2004_.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-20_ is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-20_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a)☐ All   b)☐ Some * c)☐ None of:

         1.☐ Certified copies of the priority documents have been received.

         2.☐ Certified copies of the priority documents have been received in Application No. _____.

         3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

WILLIAM THOMSON
SUPERVISORY PATENT EXAMINER

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
     Paper No(s)/Mail Date _4/21/2004_.

4)☐ Interview Summary (PTO-413)
     Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   Claims 1-20 are presented for examination.

Claim Rejections - 35 USC § 101

2.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 14-20 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 17 is directed to machine and/or manufacture claims, however, the claim fails to cite any physical article or object and therefore, fail to meet the requirements of being a machine or manufacture.

Claims 15-20 depend on claim 14, and do not overcome the deficiency of claim 14, and therefore, are rejected under the same rejection.

See MPEP 2106 and 2107.

Claim Rejections - 35 USC § 112

3.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2, 6, 9 and 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2 recites " a reference count for the replacement software module", however, "a

reference count" is already existed in claim 1, Applicant should use "a second reference count for

the replacement software module" to distinct between both.

Claim 6 recites "a reference is further defined as a requested function provided by the

given software module", however, based on the language of claim 1, a reference should be a

request for the requested function provided by the given software module.

Claims 9 and 14 suffer the same problem as claim 2 above.

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

5.   **Claims 1-6, 8-10 and 12-13 are rejected under 35 U.S.C. 103(a) as being**

unpatentable over Ma et al. (U.S. 5,920,725) in view of APA (Admitted Prior Art).

As to claim 1, Ma teaches a method for replacing a loadable software module in a system

(a run-time object-updating system; col. 4, lines 36-38), comprising:

- maintaining a reference count for a given software module (object 132; col. 10, line 30)

loaded in the system (each object maintains its own reference count; col. 10, lines 42-43),

- loading a replacement software module (replacement object 132' ... instantiated; col. 10,

lines 47-49) for the given software module into the system (object 132),

- receiving a reference for the given software module after the replacement software

module is loaded into the system (new reference to object 132; col. 10, line 49), and

    - directing the reference for the given software module to the replacement software

module when the reference count is greater than zero (instead, new reference ... to the new

objects 132'; col. 10, lines 51-56).

Ma does not teach replacing a loadable software module in an operating system.

However, Ma teaches the invention is not limited to application system, various modifications to

the invention will be apparent to person skill in the art (col. 5, lines 49-59). APA teaches

replacing a loadable software module in an operating system (page 1, paragraph 2).

It would have been obvious to one of ordinary skill in the art at the time the invention

was made to combine the teaching of Ma and APA because Ma teaches updating is occurred

while the application still running (col. 4, lines 59-63), thus avoid undesirable downtime in the

systems (col. 4, lines 7-10), and the technique would overcome the same problems in the

operating system art.

As to claim 2, Ma as modified teaches maintaining a second reference count for the

replacement software module (inherent from "each object maintains its own reference count; col.

10, lines 42-43").

As to claim 3, Ma as modified teaches wherein the step of directing the reference to the

replacement software module further comprises incrementing the second reference count for the

replacement software module (each object maintains its own reference count, which is

incremented as another object references it; col. 10, lines 42-43).

As to claim 4, Ma as modified teaches unloading the given software module when the reference count is zero (Object 132 ... immediately deleted; col. 10, lines 57-58).

As to claim 5, Ma as modified teaches wherein the step of maintaining a reference count further comprises incrementing the reference count when an application invokes a requested function provided by the given software module and decrementing the reference count when the requested function is completed by the given software module (each object .. object releases it; col. 10, lines 42-44).

As to claim 6, Ma as modified teaches a reference is further defined as a request for a requested function provided by the given software module (the reference count ... currently communicating with the object; col. 7, lines 32-34, request; col. 8, line 47).

As to claim 8, see rejections of claim 1 and 4 above. further teaches linking the replacement software module into the kernel of the operating system.

As to claims 9-10, see rejections of claims 2-3 above.

As to claim 12, APA teaches the kernel of the operating system is further defined as a Linux kernel (Linux kernel; page 1, paragraph 2).

As to claim 13, APA teaches the loadable software module is further defined as an access control module operating within the Linux Security framework (kernel security module; page 1, paragraph 2).

6.   **Claims 7, 11, and 14-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ma et al. (U.S. 5,920,725) in view of APA (Admitted Prior Art) further in view of Corbet (Porting Drivers to the 2.5 kernel).**

As to claim 7, Ma and APA do not teach the step of maintaining a reference count is performed by a reference count manager. However, Corbet teaches the reference count is managed outside the object (page 148, section 2.4), thus, there should be a manager to take care of this reference count. It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the teaching of Corbet to the system of Ma and APA because Corbet teaches moving manipulating the count of reference to a module outside the object would over the error prone when it was manipulated inside the module itself (page 148, section 2.4)

As to claim 11, Ma as modified by Corbet teaches the step of maintaining a reference count further comprises incrementing the reference count when a kernel control path starts using the loadable software module and decrementing the reference count when the kernel control path stops using the loadable software module (see Ma; col. 8, lines 42-44 and Corbet; page 148, section 2.4.

As to claim 14, see rejections of claims 1 and 7 above. Corbet further teach the reference count manager residing in the execution environment (2.5 kernel; abstract and page 148, section 2.4). APA teaches the kernel residing in the execution environment (kernel, operating system; page 1, paragraph 2).

As to claim 15, see rejection of claim 2 above.

As to claim 16, Ma as modified by Corbet teaches the kernel is in data communication with the reference count manager to access the reference count upon receipt of the resource request for the loadable software module (see Corbet; any code ... reference count; page 148, section 2.4).

As to claim 17, see rejection of claim 4 above.

As to claims 18-20, see rejections of claim 11-13 above.

Conclusion

7.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO 892.
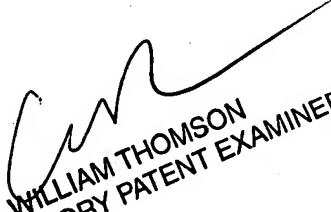
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Diem K. Cao whose telephone number is (571) 272-3760. The examiner can normally be reached on Monday - Friday, 8:30AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Thomson can be reached on (571) 272-3718. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DC
March 28, 2007

WILLIAM THOMSON
SUPERVISORY PATENT EXAMINER